

REMARKS

Claims 2, 7-11 and 25-31 are pending herein. Claim 2 has been amended to be in independent form, including the features of claim 1, now canceled. In addition, claims 3-5 have been canceled. Claim 26 has also been amended to be in independent form, including the features of claim 25. The amendments herein raise no new issues for the Examiner to consider.

1. Claims 1-4, 7-11 and 25-31 were rejected over Iijima et al. (Iijima) in view of Vaidya et al. (Vaidya). This rejection is respectfully traversed for the following reasons.

Like the present invention, Iijima is related to an IBAD apparatus for depositing a biaxially textured film on a substrate. The PTO appears to rely upon Iijima for features of the claimed invention. In particular reference to claim 25, the claimed invention calls for a substrate assembly that includes internal liquid coolant channels and internal gaseous coolant delivery channels. In this respect, the PTO has relied upon the cooling device including pedestal 60 illustrated in Fig. 5 of Iijima. The cooling device is composed of a hermetically sealed structure having inflow and outflow pipes 62, 63 for flow of a coolant liquid or a coolant gas, such as liquid nitrogen or gaseous air. See paragraph 65. Iijima teaches that either liquid or gas may be utilized as the coolant medium. In addition, Iijima draws particular significance to the fact that the pedestal and inflow/outflow pipes are entirely hermetically sealed from the deposition chamber. As described in paragraphs 33-38 and paragraph 66, Iijima teaches that hermetic sealing of the pedestal achieves optimal cooling, in a manner such that the cooling device can be operated completely independently of the low-pressure deposition ambient in the chamber.

The PTO appears to rely upon the cooling device which includes pedestal 60 and outflow/inflow pipes to meet the claimed limitation of a substrate assembly that has internal liquid coolant channels, and has argued that internal gaseous coolant delivery channels would have been added to the structure of Iijima in light of the secondary reference to Vaidya. However, such a modification to the Iijima apparatus is not even remotely suggested by the references to one of ordinary skill in the art.

More particularly, Iijima teaches that the cooling device is utilized in connection with gas or liquid. That is, Iijima already teaches a structure which can accommodate gases, and there is no teaching or suggestion of modification to incorporate additional channels for provision of additional gas flow. Further, the secondary reference is drawn to an apparatus for chemical vapor deposition of magnetic film such as Co-Ni films on a plastic tape, to form recording media. One of ordinary skill in the art would not have looked to such a technology for modification of an apparatus for depositing IBAD films of a superconductor.

In any event, with particular reference to claims 2 and 26, clearly the art of record does not teach or even remotely suggest modification of the Iijima apparatus to destroy the hermetic seal of the cooling device to deliver flow of gas to a back side of the tape translating across the substrate assembly (claim 26) or provide channels open to the deposition chamber (claim 2). As stated above, Iijima unequivocally teaches the provision of a hermetically sealed cooling device to enable cooling through independent control of the device relative to the deposition chamber. Still further, a break of the hermetic seal according to Iijima would naturally result in loss of the liquid nitrogen coolant, and potential destruction of the layer being deposited.

For at least the forgoing reasons, Applicants respectfully submit that the presently claimed invention would not have been obvious over Iijima in view of Vaidya. Accordingly, withdrawal of the rejection over Iijima in view of Vaidya is respectfully requested.

2. Claim 5 was rejected in further view of Cavalca et al. This rejection is moot in view of the cancellation of claim 5.


Applicants respectfully submit that the present application is now in condition for allowance. Accordingly, the Examiner is requested to issue a Notice of Allowance for all pending claims.

Should the Examiner deem that any further action by the Applicants would be desirable for placing this application in even better condition for issue, the Examiner is requested to contact Applicants' undersigned attorney at the number listed below.

Applicant(s) does not believe that any additional fees are due, but if the Commissioner believes additional fees are due, the Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-2469.

Respectfully submitted,

Date 1/30/06


Jeffrey S. Abel, Reg. No. 36,079
Attorney for Applicant(s)
TOLER, LARSON & ABEL, L.L.P.
5000 Plaza On The Lake, Suite 265
Austin, Texas 78746
(512) 327-5515 (phone)
(512) 327-5452 (fax)